

### **REMARKS**

The specification and claims have been carefully reviewed in light of the Office Action to which this Amendment is responsive. By this Amendment, independent claim 11 has been amended to improve its form and to distinguish even more clearly over the prior art. New claim 12 has been added for more completely covering Applicant's invention.

Claims 2-11 have been rejected as being obvious over Gostilo (4,463,753) in view of Grossbernt (4,544,313) and reconsideration of such rejection is respectfully requested. As brought out in the prior prosecution, Applicant's invention is directed to an improved bone screw specifically designed for use in orthopaedic surgery with external fixture fixation devices. In such devices, screws are fixed to opposite ends of an eternal fixator which is attached to the bone by the bone screws. The bone screws themselves are not used to achieve osteosynthesis. Gostilo and Grossbernt relate to distinctly different types of fasteners and provide no suggestion, alone or in combination, of the claimed bone screw for orthopaedic fixation devices, nor have any appreciation for the problems to which the present invention is directed.

Indeed, contrary to the Examiner's indication that Gostilo is a screw for use with external fixation devices, the screw in Gostilo is just a screw for joining parts of bone (see Col. 1, lines 9-10). It is not for use with external fixation devices. Such a screw must be used on its own to achieve osteosynthesis. In fact, its distal threaded section (5) is intended for engaging opposite cortexes of the bone, whereas the smooth section (3) and the proximal threaded section (4) lie inside the trabecular zone of the bone (see e.g. FIG. 5e). There is no way such an embedded screw can be used with an external fixation device, and certainly, there is no suggestion in the reference.

Grossbernt is even more non-analogous to the field of the present invention. Grossbernt relates to screws for use with soft material (see Col. 1, lines 14-15), in contrast to bone screws which are used with very hard bone material. Indeed, since the Grossbernt screw is used with soft material, it has a large head, apparently for preventing the screw from completely sinking or advancing into the soft material. Grossbernt neither relates to the field of bones screws, nor concerns similar problems. There would be no impetus to one skilled in the art to look to the teachings of Grossbernt for modifying a bone screw, particularly a bone screw for orthopaedic external fixation devices.

Independent claim 11 as now presented has been amended to even more clearly distinguish the prior art. The claim calls for the screw to have a non-threaded head at one end for securement by an orthopaedic external fixation device, a single threaded section at an opposite end, and non-threaded shank between the head and threaded portion. Gostilo has threaded portions at opposite ends of the screw, and, as will be appreciated by persons skilled in the art, neither Gostilo nor Grossbernt have head configurations for securement by an orthopaedic external fixation device. For reasons set forth in the prior amendment, the prior art further lacks any teaching of the specifically designed thread configuration in a bone screw, nor appreciate the advantages of such designs in bone screws. Moreover, Examiner admittedly fails to give patentable weight to the ratio recited in independent claim 11 on the grounds that discovery of the optimum or workable range involves routine skill. There must, however, be some impetus or suggestion to a person skilled in the art to seek the optimum range, which is lacking from the teachings of the references directed to substantially different fastening devices. As set forth in the prior prosecution, the importance of the claimed combination, as recited in

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independent claim 11, in achieving the advantages of the present is unobvious from the prior art.

Since the remaining claims all depend from claim 11, they similarly distinguish the art.

From the foregoing, it is believed that the claims as now presented all are directed to features which are neither disclosed nor suggested by the prior art so as to be in condition for allowance. Accordingly, an early action to that effect is respectfully requested.

Respectfully submitted,



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